

Application No. 09/650,626

REMARKS

Claims 1-12, 15, 18, 20-23, 25, 26, 28, 29, 32-49 and 51-57 are pending. By this Amendment claims 11 and 49 are cancelled while claims 1-10, 48, and 51-57 are amended.

Claims 29-39 are deemed allowed by the Office Action of March 14, 2003.

I. Claim Rejections 35 USC § 103

1. Claims 1-11, 23, 26, 28, 48, 49, 51, and 54-57 stand rejected under 35 USC § 103(a) as being unpatentable over Williams (U.S. Patent No. 5,754,451) in view of Vines et al. (U.S. Patent No. 6,006,171).

With regard to independent claims 1 and 48, the office action maintains the rejection of them under 35 USC § 103(a) as being unpatentable over Williams in view of Vines. The office action indicates that Williams does not disclose applicant's claimed feature of a plurality of digital channels pre-defined to comprise a virtual machine but that Vines teaches this feature.

In response, applicants have amended independent claims 1 and 48, and their dependent claims, to emphasize that what is being claimed is indeed a *monitoring* system that monitors a CMC (computerized machine controller); the CMC provides the plurality of digital channels that are pre-defined to comprise a virtual machine. Vines on the other hand is not a monitoring system, not a control system, but is merely a *linking software* that enables the user to link existing computerized maintenance management systems (CMMS) to existing process control software, see Background of the Invention, col. 1, lines 19-48 that describes types of CMMS software (e.g., MAXIMO system) and types of process control software (e.g., I/A Series system from Foxboro Company), as well as the first sentence of the Summary of the Invention, col. 1, lines 52-53 that states "The invention relates to the *integration or dynamic linking* of CMMS

Application No. 09/650,626

software and process control software.” (emphasis added). See also col. 5, lines 9-15 “Creating a link as described above integrates the process control software data into the CMMS. Once this has been done, data can be shared between the CMMS software and the process control software. For example, data from the CMMS database can be made accessible to the control room operator through the user interface of the process control software.” See also claim 1 of Vines.

If the linking of an existing computerized maintenance management system and process control system is not necessary, there is no need for the invention of Vines. The main reference, i.e. Williams, U.S. Pat. no. 5,754,451, does not require linking of maintenance software with process control software. Rather, the maintenance software and the computer that it resides in are directly interfaced to a process controller. See Fig. 1, and see col. 3, lines 10-15, “The preventative maintenance device 10 interfaces to the input/output memory 20 of the programmable logic controller 14. The preventative maintenance device 10 dynamically monitors the input/output memory 20 as the programmable logic controller 14 controls the manufacturing equipment 12.” See also col. 5, lines 45-48, “The computer 33 in the preventative maintenance device 10 can include a standard interface card for communicating with the input/output memory 20 of the programmable logic controller 14.”

As such, there is no suggestion or teaching to combine Vines with Williams, the invention of Vines, its linking of maintenance software to process control software, is unnecessary to the invention of Williams and could add nothing to its operation. In fact, Williams teaches away from the Vines invention as it notes its desire of its maintenance software to be non-intrusive to the programmable logic controller, see col. 1, lines 46-48.

Application No. 09/650,626

As there is no reason to combine Vines with Williams, applicant submits that the rejection to independent claims 1 and 48 under 35 USC §103(a) does not meet the standard for obviousness and requests that the rejection be withdrawn to enable allowance of independent claims 1 and 48, as well as those claims depending therefrom.

With regard to independent claim 23, the office action maintains the rejection of this claim under 35 USC §103(a) as being unpatentable over Williams in view of Vines. The office action indicates that Williams does not disclose applicant's claimed feature of an analysis component that performs statistical analysis on the acquired transition data to determine if one of said plurality of digital channels has experienced an event, as measured from a pre-defined cycle start that is selected from a group consisting of: an unexpected transition absent a downtime event and a lack of an expected transition absent a downtime event. The office action refers to col. 5, lines 16-22 of Vines for this feature.

Applicant's respectfully traverse this rejection. In keeping with the arguments submitted immediately above with respect to independent claims 1 and 48, applicant submits that there is no teaching or suggestion to combine Vines with Williams. Vines describes an invention for linking maintenance software with process control software. Williams utilizes a direct interface from its maintenance computer/maintenance software into a process controller; no additional linking of the maintenance software to the process control is required, or even possible in view of the direct interface utilized by Williams. As such, there is no reason to combine Vines with Williams, applicant submits that the rejection to independent claim 23 under 35 USC §103(a) does not meet the standard for obviousness and requests that the rejection be withdrawn to enable allowance of independent claim 23, as well as those claims depending therefrom.

Application No. 09/650,626

2. Claims 12, 15, 18, 20, and 21 stand rejected under 35 USC §103(a) as being unpatentable over Williams in view of Vines and further in view of U.S. Patent No. 5,870,693 to Seng et al.

With respect to independent claim 12, applicant reiterates that there is no teaching or suggestion to combine Vines with Williams. Vines describes an invention for linking maintenance software with process control software. Williams utilizes a direct interface from its maintenance computer/maintenance software into a process controller; no additional linking of the maintenance software to the process control is required, or even possible in view of the direct interface utilized by Williams. As such, there is no reason to combine Vines with Williams and, therefore, no reason to combine Seng et al with Vines and Williams. Applicant submits that the rejection to independent claim 12 under 35 USC §103(a) does not meet the standard for obviousness and requests that the rejection be withdrawn to enable allowance of independent claim 12, as well as those claims depending therefrom.

3. Claims 40-47 stand rejected under 35 USC §103(a) as being unpatentable over Williams in view of Vines and further in view of U.S. Patent No. 5,586,156 to Gaubatz.

With respect to independent claim 40, applicant reiterates that there is no teaching or suggestion to combine Vines with Williams. Vines describes an invention for linking maintenance software with process control software. Williams utilizes a direct interface from its maintenance computer/maintenance software into a process controller; no additional linking of the maintenance software to the process control is required, or even possible in view of the direct interface utilized by Williams. As such, there is no reason to combine Vines with Williams and,

Application No. 09/650,626

therefore, no reason to combine Gaubatz with Vines and Williams. Applicant submits that the rejection to independent claim 40 under 35 USC §103(a) does not meet the standard for obviousness and requests that the rejection be withdrawn to enable allowance of independent claim 40, as well as those claims depending therefrom.

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,



Kimberly K. Baxter
Registration No. 40,504

Customer No. 24113
Patterson, Thunte, Skaar & Christensen, P.A.
4800 IDS Center
80 South 8th Street
Minneapolis, Minnesota 55402-2100
Telephone: (612) 349-5750

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